

REMARKS

Claims 2, 4, and 8-11 are pending in this application.

103(a) Rejection of Claims 2, 4, and 8-11 over *Ooishi* in view of *Branch et al.*

The Examiner rejected claims 2, 4, and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,271,710 to *Ooishi* ("*Ooishi*") in view of U.S. Patent Application Publication No. 2003/0076179 to *Branch et al.* ("*Branch et al.*"). Applicants respectfully traverse the rejection for the following reasons.

Claims 2, 4, and 8-11 are allowable over *Ooishi* in view of *Branch et al.* for at least the reason that *Ooishi* and *Branch et al.* fail to disclose each and every element recited in independent claim 8, from which claims 2, 4, and 9-11 are dependent. For example, *Ooishi* and *Branch et al.* fail to disclose a **"circuit for providing a refresh cycle for a memory device"** comprising, inter alia, **"a voltage generator providing a temperature dependent voltage"** and **"a second current generator providing a second current in response to the temperature dependent voltage,"** as recited in claim 8.

Instead, *Ooishi* discloses a temperature dependent circuit for generating current which is varied depending on a temperature (Col. 3, lines 36-39). "Constant current generated by constant current generating circuit 20 is applied to a temperature dependent circuit 21 and a current dividing circuit 23" (Col. 7, lines 63-65).

"Temperature dependent circuit 21 includes p channel transistors 211 and 212 each receiving reference current I_{ref} from constant current generating circuit 20 at its gate,

transfer gates 215 and 216, n channel transistors 213 and 214 constituting a current mirror circuit, and resistances R1 and R2 connected between n channel transistors 213 and 214 and the ground, respectively" (Col. 8, lines 56-62). "Furthermore, a mirror-connected n channel transistor 217 is connected to the drain of n channel transistor 214" and "n channel transistors 218, 219 and 220 for adjusting a level of temperature dependency are connected in parallel to the gate and the drain of n channel transistor 217" (Col. 9, lines 3-10). "Current I_m divided by current dividing circuit 23 is input to the gate of n channel transistor 246, [and] current I_t is applied from temperature dependent circuit 21 to a node Z which is the drain of n channel transistor 246" (Col. 9, lines 18-22), as shown in Figure 4 of *Ooishi*. A current "extracted from node Z" is "supplied as a gate potential TMH of a transistor for controlling current in an inverter of ring oscillator 30" (Col. 9, lines 21-27).

The Examiner relies on the transistors 211-214 and 217, transfer gates 215 and 216, and resistances R1 and R2 of *Ooishi* to constitute the "voltage generator providing a temperature dependent voltage" recited in claim 8. The Examiner also relies on the "n channel transistors 218, 219, and 220" of *Ooishi* to constitute the "second current generator providing a second current in response to the temperature dependent voltage" recited in claim 8.

However, the elements of *Ooishi* relied on by the Examiner do not constitute "a voltage generator providing a temperature dependent voltage" or "a second current generator providing a second current in response to the temperature dependent

voltage,” both of which are required by claim 8 (Emphasis added). Rather, “n channel transistor 217 receives current leaking from n channel transistor 214” (Col. 9, lines 5-6; emphasis added). “Current in the mirror-connected n channel transistor 217 is amplified by n channel transistors 218, 219 and 220, and then is supplied to adding circuit 24” (Col. 9, lines 10-12; emphasis added). Since leaking a current, amplifying a current, and supplying a current do not constitute “providing a temperature dependent voltage” or “providing a second current in response to the temperature dependent voltage,” *Ooishi* fails to teach the “voltage generator” and the “second current generator” recited in claim 8.

Branch et al. fails to make up for the deficiencies of *Ooishi* for at least the reason that *Branch et al.* also does not teach “**a voltage generator providing a temperature dependent voltage**” or “**a second current generator providing a second current in response to the temperature dependent voltage**,” both of which are required by claim 8. Thus, claim 8, and claims 2, 4, and 9-11 dependent therefrom, are allowable over *Ooishi* in view of *Branch et al.* under 35 U.S.C. § 103(a).


In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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